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IS 5084 (1990): Socks, Nylon [TXD 10: Hosiery]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
मोजे, नायलोन के — विशिष्ट
(पहला पुनरीक्षण)
Indian Standard
SOCKS, NYLON — SPECIFICATION
(*First Revision*)

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BUREAU OF INDIAN STANDARDS
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Price Group 2

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 20 February 1990, after the draft finalized by the Hosiery Sectional Committee had been approved by the Textile Division Council.

The standard was originally published in 1969. The standard has been taken up for revision to incorporate the weight of five sizes of children socks and amend the requirements of colour fastness in respect of light, washing, perspiration and rubbing.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SOCKS, NYLON — SPECIFICATION

(First Revision)

1 SCOPE

1.1 This standard prescribes the requirements for seamless socks knitted in plain, rib or fancy stitches from multifilament stretched nylon yarn.

1.2 This standard does not prescribe the design, colour combination, general appearance, feel and lustre of the socks nor does it specify their degree of whiteness or shade.

2 REFERENCES

2.1 The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions given in IS 3596 : 1967 shall apply.

4 TYPES

4.1 Depending upon the pattern of stitches, the socks shall be of any one of the following three types:

- a) Plain-knitted socks,
- b) Rib-knitted socks, and
- c) Fancy-knitted socks.

4.1.1 In case of rib and fancy-knitted socks, the particular pattern of stitches shall be as agreed to between the buyer and the manufacturer.

5 YARN

5.1 Nylon Stretch Yarn

Multifilament stretch nylon yarn used in knitting, linking and splicing the socks shall conform to the requirements given in Table 1.

5.1.1 Elastic Yarn

Elastic yarn or covered rubber thread having an elongation not less than 450 percent shall be used for laying-in the top portion of the socks.

5.2 Socks (see Fig. 1)

The socks shall be knitted on circular knitting machines. The top of the socks shall be knitted in rib or plain stitches with covered rubber thread or any other suitable elastic thread laid-in; and the leg and instep in plain, rib or fancy stitches depending upon the type of the socks (see 4.1).

NOTE — Particulars of knitting machines are given in Table 2 for information.

Table 1 Requirements of Nylon Yarn
(Clause 5.1)

Sl No. (1)	Characteristic (2)	Requirement (3)	Method of Test (4)
i)	Tenacity, g/tex (g/d)	32 to 45 (3.5 to 5.0) }	IS 1670 : 1970
ii)	Elongation at break	25 to 30 percent }	
iii)	Minimum colour fastness rating to:		
a)	Light (change in colour)	4	IS 686 : 1988 or IS 2454 : 1985
b)	Washing : Test 1		
1)	Change in colour	4	IS 687 : 1979
2)	Staining of adjacent fabric	4	
c)	Perspiration, acid and alkaline:		
1)	Change in colour	3	IS 971 : 1983
2)	Staining of adjacent fabric	3	
d)	Rubbing		
1)	Dry	4	IS 766 : 1988
2)	Wet	4	

Table 2 Particulars of Knitting Machines
[Clause 5.2 (Note)]

Size of Socks	Diameter of Machine mm	Total Number of Needles for Approximate Gauge of Machines*			
		12 to 14	15	16	18
Children	70	120	132	140	158
Ladies	83	144	156	164	186
	89	156	168	176	200
Gents	95	168	180	188	216
	102	176	192	200	228
Recommended linear density of yarn in denier		2/111	or		2/112

*Gauge of machine = number of needles in 25.4 mm (1 inch) of circumference.

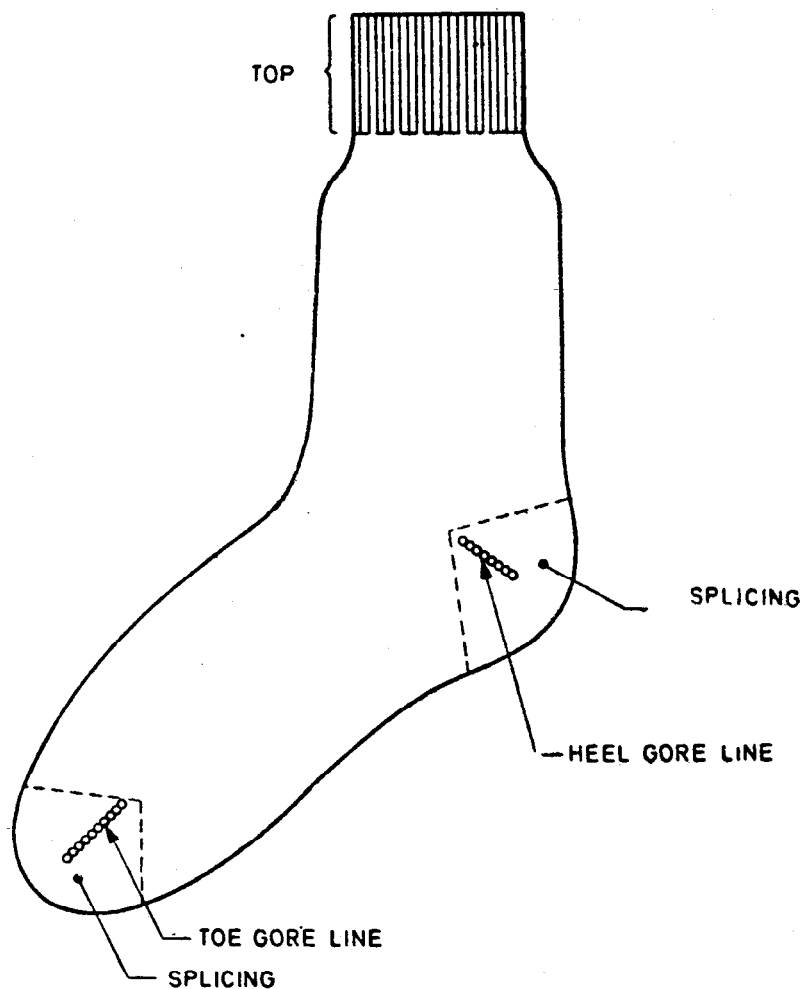


FIG. 1 Sock

5.2.1 The heel, sole and toe portions of the socks should be knitted in plain stitches with splicing. The splicing should be uniform throughout and the spliced portion free from creases or folds.

5.2.2 The socks shall be securely linked at the toe. The linking shall be elastic, smooth and free from knots. Linking shall not give way when the socks are stretched to the full extent of stretchability of the socks.

6 SPECIFIC REQUIREMENTS

6.1 Size

The nylon socks shall generally be of three sizes, namely, gents, ladies and children.

6.1.1 Depending upon the age, the size of nylon socks for children may be further divided into 5 different sizes, namely, 1, 2, 3, 4 and 5.

6.2 Weight

The weight of socks of various sizes shall be as given in Table 3.

Table 3 Minimum Weight Per Ten Pairs of Socks, in g
(Clause 6.2)

Size	Single Cylinder Product			Double Cylinder Product with Reinforced Heel and Toe
	Plain Socks with Single Heel and Toe	Plain Socks with Reinforced Heel and Toe	Fancy Socks with Reinforced Heel and Toe	
(1)	(2)	(3)	(4)	(5)
Gents	225	250	250	280
Ladies	170	195	195	210
Children				
1	90	110	110	—
2	105	125	125	—
3	120	140	140	—
4	135	155	155	—
5	150	170	170	—

6.3 Freedom from Defects

Socks shall be free from noticeable manufacturing defects, such as, large mends, ladders (dropped stitches), improper splicing and chemical damages. Dyed socks shall be free from dyeing defects, such as, streakiness and uneven dyeing.

7 PAIRING

7.1 Socks shall be matched and paired according to their type, size, shade and colour combination. A tolerance of 5 mm in the leg length and foot length of socks shall, however, be permissible while pairing.

8 MARKING

8.1 A paper label bearing the following information shall be attached to each pair of socks:

- Size — Gents, Ladies or Children — 1, 2, 3, 4 or 5 (see 6.1 and Table 3); and
- Indication of the source of manufacture.

8.1.1 The label on the socks may also be marked with Standard Mark.

9 PACKING

9.1 Each pair of socks shall be suitably clipped at the heel, toe and top portions. The clipped pair shall be folded properly at the heel gore line so as to form two layers. Each folded pair shall be placed in a polyethylene or cellophane bag of suitable size.

9.2 The socks in bags shall be packed in cardboard boxes of suitable size. The number of socks in a box shall be as agreed to between the buyer and the manufacturer.

9.2.1 Each unit cardboard box shall be marked with the following:

- Size — Gents, Ladies or Children — 1, 2, 3, 4 or 5;
- Number of pairs packed in the box;
- Indication of the source of manufacture; and
- Any other information required by the buyer.

9.3 A suitable number of cardboard boxes shall be packed in wooden or plywood cases lined

with one layer each of polyethylene film (see IS 2508 : 1984) and kraft paper (see IS 1397 : 1967) or waterproof packing paper. The packing materials shall be of sufficient size to cover the contents of the case fully. The cases shall be bounded over with steel strips (or hoops).

9.3.1 Each box shall be marked with the following:

- Name of the material, namely, nylon socks;
- Size;
- Indication of the source of manufacture;
- No. of pairs packed in the box; and
- Any other information required by the buyer.

10 SAMPLING

10.0 The sampling procedure given below shall give desired protection to the buyer and the seller provided the lot submitted for inspection is homogeneous. To achieve this, the manufacturer shall maintain a system of process control at all stages of manufacture and shall ensure that the socks tendered by him for inspection comply with the requirements of this standard in all respects.

NOTE — For effective process control, the use of statistical quality control techniques is recommended and a helpful guidance may be obtained in this respect from IS : 397 (Parts 1 to 3).

10.1 Lot

In any consignment, all the pairs of socks of the same type and size shall be grouped together to constitute a lot.

10.1.1 The conformity of the lot to the requirements of this specification shall be determined on the basis of tests carried out on the samples selected from it.

10.2 Unless otherwise agreed to between the buyer and the seller, the number of pairs of socks, depending upon the size of the lot, shall be selected at random in accordance with col 2 of Table 4.

Table 4 Number of Pairs of Socks to be Selected from a Lot and Permissible Number of Non-conforming Pairs of Socks

No. of Pairs of Socks in the Lot	Gross Sample Size		Sub-Sample Size	
	No. of Pairs of Socks to be Inspected	Permissible No. of Non-conforming Pairs of Socks	No. of Pairs of Socks to be Inspected	Permissible No. of Non-conforming Pairs of Socks
(1)	(2)	(3)	(4)	(5)
Under 50	10	1	2	0
51 to 100	20	2	2	0
101 " 200	30	3	2	0
201 " 300	40	3	3	0
301 " 500	50	4	5	0
501 " 800	70	6	7	1
801 " 1 300	110	8	10	1
1 301 " 3 200	150	10	15	2
3 201 and above	220	14	30	3

10.3 The number of tests and criteria for conformity for each of the characteristics shall be as follows:

<i>Characteristic</i>	<i>Number of Tests</i>	<i>Criterion for Conformity</i>
Freedom from defects	See col 2 of Table 4	Non-conforming pairs not to exceed the corresponding number given in col 3 of Table 4
Weight	Equal to the number of sets of 10 pairs of socks from the socks selected according to col 2 of Table 4	Each observed value satisfies the relevant requirement
Tenacity, elongation at break and colour fastness to various agencies except light	One from each pair selected according to col 4 of Table 4	Non-conforming pairs not to exceed the corresponding number given in col 5 of Table 4
Colour fastness to light	One test specimen up to 500 pairs and two above that	Each observed value satisfies the specified requirements

ANNEX A (Clause 2.1)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS 397	Method for statistical quality control during production	IS 971 : 1983	Method for determination of colour fastness of textile materials to perspiration (<i>first revision</i>)
IS 397 (Part i)	Control charts for variables (<i>first revision</i>)		
IS 397 (Part 2)	Control charts for attributes and count of defects (<i>second revision</i>)	IS 1397 : 1967	Kraft paper (<i>first revision</i>)
IS 397 (Part 3)	Special control charts	IS 1670 : 1970	Method for determination of breaking load, elongation at break and tenacity of yarns (<i>first revision</i>)
IS 686 : 1988	Method for determination of colour fastness of textile materials to daylight (<i>first revision</i>)	IS 2454 : 1985	Method for determination of colour fastness of textile materials to artificial light (xenon lamp) (<i>first revision</i>)
IS 687 : 1979	Method for determination of colour fastness of textile materials to washing: Test 1 (<i>second revision</i>)	IS 2508 : 1984	Low density polyethylene films (<i>second revision</i>)
IS 766 : 1988	Method for determination of colour fastness of textile materials to rubbing	IS 3596 : 1967	Glossary of terms relating to hosiery

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